

**K.T.S.P. MANDAL'S**  
**SAHEBRAOJI BUTTEPATIL MAHAVIDYALAYA, RAJGURUNAGAR**  
**DEPARTMENT OF BOTANY**

**Teaching Plan (A.Y. 2025-26)**

**F. Y. B. Sc. Botany [Semester - II]**

**Course Code - BOT-151-T Course Title: Plant Morphology**

| Sr. No | Month    | Topics                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Teacher |
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| 1.     | December | <b>Credit-I</b><br><b>1 Introduction to Plant Morphology</b><br>1.1 Introduction, Definition; Types of morphology – Descriptive and Interpretative.<br>1.2 Importance of Morphology.<br><b>Root Morphology</b><br>2.1 Definition, Parts of root; Types – Tap root and fibrous/adventitious<br>2.2 Modifications of roots – Aerial roots (Hanging roots) with velamen tissue in Epiphytes; Haustorial (sucking) roots in Parasites - Cuscuta, Respiratory roots/Pneumatophores in Mangrove; Fleshy/Storage roots- Conical, Fusiform, Napiform, and Tuberous roots; Roots modified for Mechanical supports–Stilt, Prop, Climbing, and Clinging roots with examples. 2.3 Functions of roots. | JRK     |
| 2.     | January  | <b>Stem Morphology</b> 3.1 Definition, Parts of stem – nodes, internodes, buds, types of buds (Apical, Axillary, Accessory Adventitious and Floral).<br>3.2 Types of stem – a) Erect–Strong, Weak (Creepers, Trailers and Climbers); b) Prostrate –Procumbent, Decumbent and Diffuse; Modifications of stem – a) Aerial – Phylloclade, Bulbil b) Sub-aerial – Runner, Sucker, Stolon, Offset; c) Underground –Rhizome, Corm, Tuber, Bulb (Tunicate and Scaly).<br>3.3 Functions of stem.                                                                                                                                                                                                  | JRK     |
| 3.     | February | <b>Leaf Morphology</b> 4.1 Definition, Parts of leaf; Stipule, Petiole, Leaf margins, Apices and Base, Surface, Venation, Phyllotaxy, Leaf duration (Caducous, Deciduous, Persistent- Evergreen).<br>4.2 Types of leaves – Simple and Compound – Pinnately (Unipinnate – Paripinnate and Imparipinnate; Bipinnate, Tripinnate and Decompound) and Palmately (Uni-, Bi-,                                                                                                                                                                                                                                                                                                                   | JRK     |

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|    |       | Tri-, Quadri- and Multifoliate);<br>Leaf Modifications: Tendrils, Spines, Phyllode, Scaly, Reproductive, Trap leaves. 4.3 Functions of leaves. 5.2 Proteomics-concept, types, methods used in proteome analysis 5.3 Bioinformatics-concept, database and its classification, data retrieval tools.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |     |
| 4. | March | Morphology of Inflorescence 5.1 Definition, Parts of Inflorescence. 5.2 Types of Inflorescence – a) Racemose – i) Main Axis Elongated – Raceme, Spike, Catkin, Spadix; ii) Main Axis Shortened – Umbel and Corymb; iii) Main Axis Flattened – Capitulate, Head / Capitulum; b) Cymose – Solitary, axillary, Terminal, Uniparous (Monochasial) – Helicoid and Scorpoid, Biparous (Dichasial), Multiparous (Polychasial) Cyme; c) Special Type – Verticillaster, Cyathium, Hypanthodium.<br>Credit-II<br>Morphology of Flower 6.1 Definition, typical structure of flower. 6.2 Types of flowers based on Symmetry, Insertion of floral whorls on thalamus.<br>7.1 Floral whorls – I) Accessory whorls: • Calyx: sepals, number, cohesion, types of calyx; Modifications of calyx – Petaloid, Pappus, Spurred; • Corolla: petals, number, cohesion, forms of corolla – Polypetalous Regular – Cruciform, Caryophyllous, Rosaceous; Polypetalous irregular – Papilionaceous; Gamopetalous Regular – Tubular, Infundibuliform, Campanulate, Salvar shaped, Rotate; | JRK |
| 5  | April | • Gamopetalous Irregular – Bilabiate, Personate and Ligulate; Perianth: tepals, number, cohesion, modifications – sepaloid and petaloid tepals. Aestivation– Definition; aestivation in calyx, corolla and perianth; types of aestivation.<br>8.1 Floral whorls – II) Necessary / Essential whorls: • Androecium: Stamen, Structure of stamen; Cohesion and Adhesion; • Gynoecium: Carpel / Pistil; structure of carpel; Types of gynoecium based on carpel number and fusion; Placentation- Definition; types – Marginal, Parietal, Axile, Free- central, Basal, superficial.<br>Morphology of Fruit and Seed 9.1 Fruit: Definition and parts of fruit. 9.2 Types of fruits 9.3 Seed: Definition, Parts of typical seed, 9.4 Morphology of Monocot and Dicot seeds.                                                                                                                                                                                                                                                                                          | JRK |

Teacher In-charge

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